

| <b>General:</b>                 | <b>Units</b> | <b>Clear Sky</b> | <b>Faded</b> |
|---------------------------------|--------------|------------------|--------------|
| Emission Designator             |              | 612KG7W          | 612KG7W      |
| Data Rate                       | Mbit/s       | 0.24             | 0.24         |
| Modulation                      |              | BPSK             | BPSK         |
| Coding Rate                     |              | 0.5000           | 0.5000       |
| Carrier Bandwidth               | MHz          | 0.6              | 0.6          |
| Uplink Frequency                | GHz          | 29.75            | 29.75        |
| Downlink Frequency              | GHz          | 19.95            | 19.95        |
| Uplink Elevation Angle          | degrees      | 35               | 35           |
| Downlink Elevation Angle        | degrees      | 35               | 35           |
| <b>Uplink:</b>                  |              |                  |              |
| Tx E/S Antenna Diameter         | m            | 0.74             | 0.74         |
| Tx E/S Power to Antenna         | W            | 1.0              | 1.0          |
| Tx E/S Antenna Gain             | dBi          | 45.6             | 45.6         |
| Tx E/S EIRP per Carrier         | dBW          | 45.6             | 45.6         |
| Tx E/S Antenna Pointing Loss    | dB           | 0.5              | 0.5          |
| Atmospheric and Rain Losses     | dB           | 0.5              | 14           |
| Free Space Loss                 | dB           | 213.6            | 213.6        |
| G/T toward Tx E/S               | dB/K         | 19               | 19           |
| C/I - Intra-system              | dB           | 15.7             | 15.7         |
| <b>Downlink:</b>                |              |                  |              |
| EIRP per Carrier towards Rx E/S | dBW          | 35.8             | 22.3         |
| Atmospheric and Rain Losses     | dB           | 0.5              | 12           |
| Free Space Loss                 | dB           | 210.1            | 210.1        |
| Rx E/S Antenna Pointing Loss    | dB           | 0.5              | 0.5          |
| Rx E/S Antenna Diameter         | m            | 3.5              | 3.5          |
| Rx E/S Antenna Gain             | dBi          | 55.3             | 55.3         |
| Rx E/S G/T                      | dB/K         | 31.3             | 28.2         |
| System Noise Temp (LNA+Sky)     | K            | 250              | 512          |
| C/I - Intra-system              | dB           | 14.4             | 14.4         |
| <b>End-to-End:</b>              |              |                  |              |
| C/N - Thermal Uplink            | dB           | 21.8             | 8.3          |
| C/I Up - ASI                    | dB           | 19.4             | 19.4         |
| C/N - Thermal Downlink          | dB           | 27.8             | -0.3         |
| C/I Down - ASI                  | dB           | 28.4             | 14.9         |
| C/(N+I) - Total Actual          | dB           | 10.7             | -1.2         |
| C/N - Required                  | dB           | -1.2             | -1.2         |
| Excess Margin                   | dB           | 12.0             | 0.0          |